



**CALIFORNIA STATE SCIENCE FAIR  
2009 PROJECT SUMMARY**

<b>Name(s)</b> <b>Jeffrey D. Chen</b>	<b>Project Number</b> <b>J1507</b>
<b>Project Title</b> <b>Using Rubbing Alcohol to Cool Down a Car</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this project is to see if spraying rubbing alcohol mixed with water can cool down a car and if so, to determine how effective different concentrations of alcohol would be compared to more conventional ways. <b>Methods/Materials</b> Different concentrations of alcohol were individually tested in each experiment by spraying them onto the interior of a car. The time it took to cool the car from 29 degrees C to 21 degrees C was recorded. These results were compared to cooling a car by more conventional methods such as using air conditioning. <b>Results</b> It took 4 min and 30 sec to cool the car from 29 to 21 degrees C using 70% rubbing alcohol, 8 min and 28 sec with a mixture of water and 70% rubbing alcohol, and 10 min and 24 sec with just water. These were significant results due to the fact that the temperature did not change for 9 min when nothing was sprayed. It took 3 min and 49 sec when air conditioning was used. <b>Conclusions/Discussion</b> Based on the results of these experiments, rubbing alcohol significantly cools down the car compared to when nothing is sprayed. This was shown by testing the solution with just water, since it took much longer for the car to cool down. Furthermore, the temperature of the car did not change for nine minutes when nothing was sprayed. Although using air conditioning is faster, rubbing alcohol does cool down a car significantly on a hot day and saves energy.	
<b>Summary Statement</b> Spraying rubbing alcohol on the interior of a car can effectively cool down the car compared to more conventional methods.	
<b>Help Received</b> Father and sister helped proof read report	